F. R. KIMBALL.

Lamp.

No. 224,441. Patented Feb. 10, 1880.

Fig: 1.

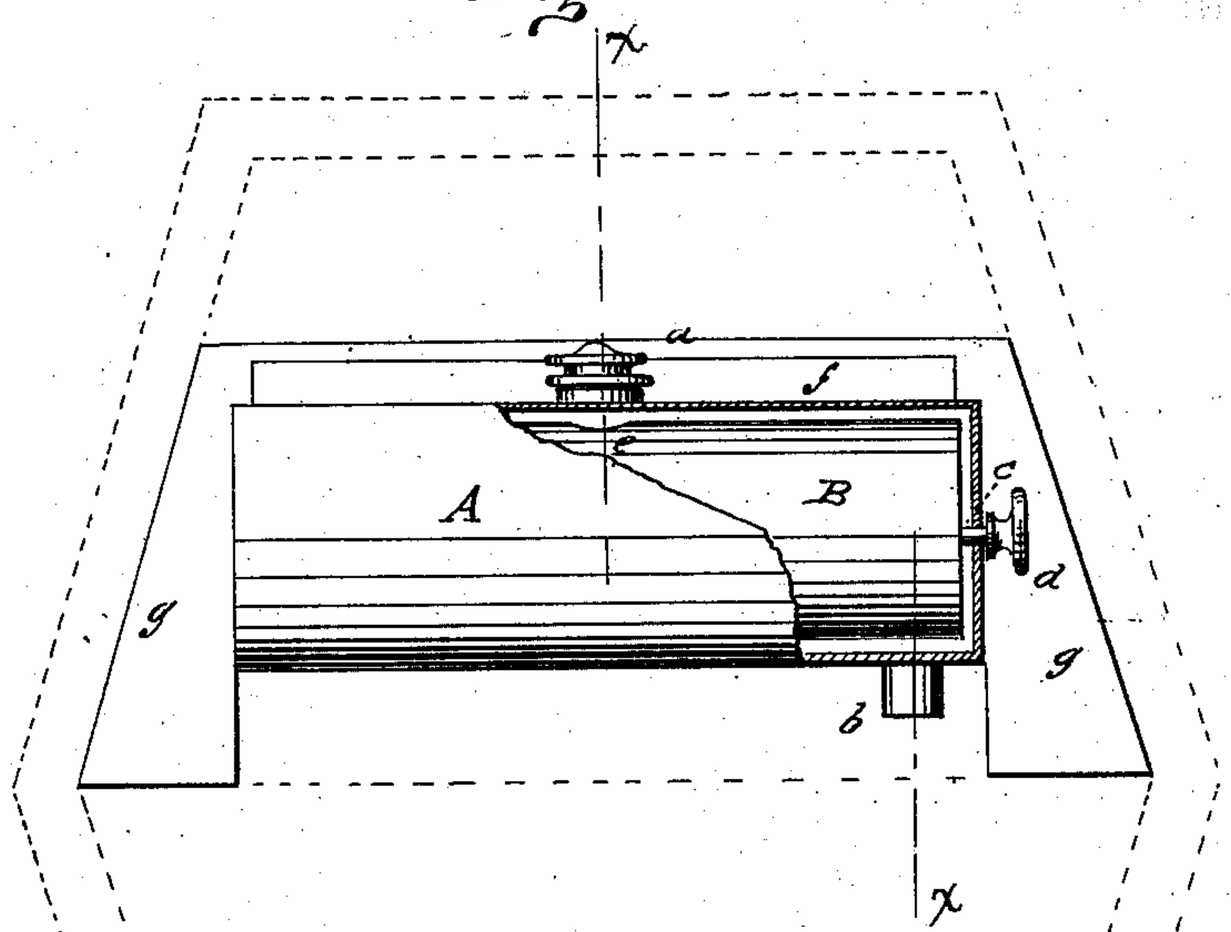



Fig: 2.

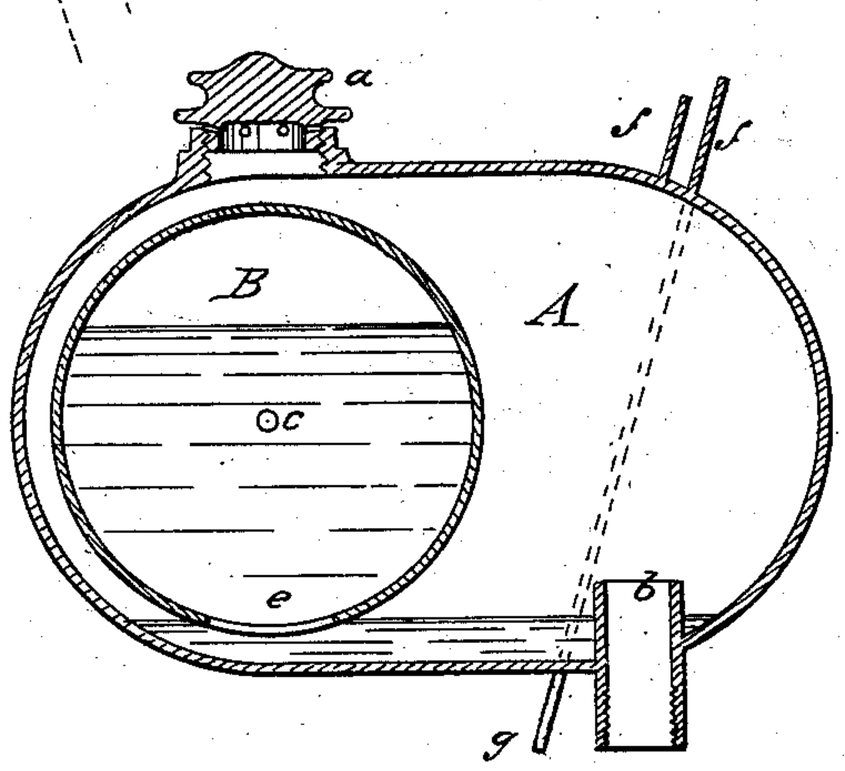
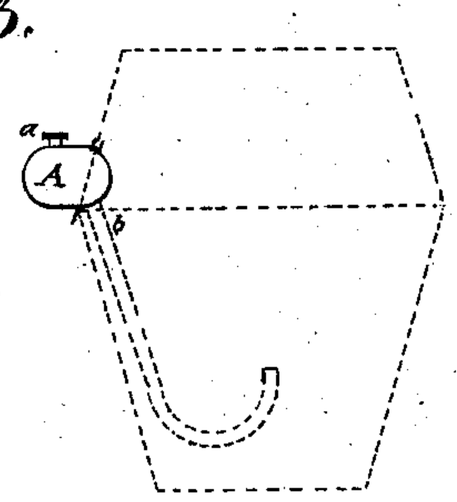



Fig: 3.




WITNESSES:

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# UNITED STATES PATENT OFFICE.

FRANK R. KIMBALL, OF BOSTON, MASSACHUSETTS.

## LAMP.

SPECIFICATION forming part of Letters Patent No. 224,441, dated February 10, 1880.

Application filed September 13, 1879.

*To all whom it may concern:*

Be it known that I, FRANK R. KIMBALL, of Boston, in the county of Suffolk and State of Massachusetts, have invented a new and useful Improvement in Reservoirs for Vapor-Lamps, of which the following is a specification.

Vapor-lamps for street use as heretofore made have been fitted with reservoirs for the gasoline, from which the gasoline runs to the burner and vaporizer. In such lamps the oil is liable to overflow from the burner and take fire.

The object of my invention is to prevent any flow of oil to the burner except in the form of vapor, and to supply the oil automatically to the vaporizer in quantities as required; also, to construct the oil-reservoir in a form adapted for ready application to or removal from an ordinary street-lamp; and the invention consists in a vaporizing-chamber and oil-reservoir combined, the oil-reservoir being a hollow cylinder fitted to revolve within the vaporizing-chamber, so that an opening at one side may be turned upward for filling the reservoir, or downward to discharge the oil, the oil being retained in the reservoir by atmospheric pressure, and discharged as required for vaporization, so that there is no risk of overflow.

The construction and operation will be more particularly explained with reference to the accompanying drawings, wherein—

Figure 1 is an elevation, partly in section, of my improved device. Fig. 2 is a vertical cross-section on the broken line *x x* of Fig. 1. Fig. 3 shows the device as applied to a street-lamp.

Similar letters of reference indicate corresponding parts.

A is an outer vessel of sheet metal, made in the shape of a flattened cylinder closed at the ends and fitted upon one (the upper) of its flat surfaces with a screw-plug, *a*, or similar device, in which there are small air-inlet openings for admitting air when the plug is partially unscrewed. In the bottom and near one side of vessel A a short tube, *b*, is fitted, which projects inside a short distance above the bottom, and is adapted for connection to the pipe that leads to the lamp-burner.

Within the vessel A is fitted the cylindrical oil-reservoir B upon a shaft, *c*, so that it may turn freely. The shaft *c* projects at one end through A, and is fitted with a knob, *d*, to permit turning of reservoir B from the outside.

In the reservoir B is an opening, *e*, and the reservoir and its opening *e* are so situated that when the opening *e* is upward it is beneath the screw-plug *a*, thereby allowing B to be filled when the plug *a* is removed.

When the reservoir B is filled it is to be turned over, with opening *e* downward, so that the oil will run into vessel A until it rises to the level of *e* and closes it. The pipe *b* terminates above that level, so that the oil cannot pass to the burner.

This combined apparatus is to be applied to the upper part of a street-lamp, as indicated in Fig. 3 and by dotted lines in Fig. 1.

Upon the upper side of vessel A are two flanges, *f*, forming a groove, and at each end there are flanges *g*. The vessel A will rest upon the rim of the lamp, with the flanges *g* taking inside of the side rims, and the upper glass at that side entering the groove between the flanges *f*.

In applying the device to a lamp, it will be necessary only to cut the glass off the depth of vessel A, no other alteration being required.

When applied, the part of vessel A containing reservoir B will be outside of the lamp, the reservoir being thereby kept cool and easy of access for filling. The heat from the lamp-burner acts upon that portion of vessel A inside the lamp, vaporizes the oil therein, and the vapor passes, by pipe *b*, to the burner. As fast as the oil is vaporized fresh oil runs from reservoir B, and air is supplied by the openings in plug *a*.

It will be seen that only vapor can pass to the burner, and there can be no overflow. When not burning the plug *a* is to be screwed tight, and there may also be a cock in the burner-tube to close off communications with the burner.

The apparatus in the form shown is also adapted for house use, as there is no danger from its use.

I am aware that it is not new to arrange oil-reservoirs within vaporizing-chambers so as to rotate them; but

What I claim is—

1. In vapor-lamps, the combination, with the vessel A, having the tube *b* and screw-

plug *a*, or equivalent device, of the oil-reservoir B, provided with the opening *e*, and fitted to revolve, substantially as and for the purposes specified.

2. In vapor-lamps, the cylindrical oil-reservoir B, having the opening *e*, and fitted upon the shaft *c* within the vessel A, that is provided with the plug *a* and tube *b*, the shaft *c* extending outside of vessel A, all substantially as and for the purposes set forth.

3. In vapor-lamps, the vessel A, provided with the flanges *f* and *g*, substantially as described and shown, whereby the vessel is adapted for application to a street-lamp, as specified.

FRANK REED KIMBALL.

Witnesses:
GEO. A. SMYTHE,
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